



2006 RESEARCH PERMITS

Charles Schelz / SEUG Ecologist

NATURAL BRIDGES NATIONAL MONUMENT

2006 Research Permits

1) Permit #: NABR-2005-SCI-0001

Study Title:

Sound Levels in Natural Bridges National Monument

Primary investigator contact information:

Name: Skip Ambrose,

Address: HC 64 Box 2205 Castle Valley, UT 84532

Phone: 435-259-0401 or 970.227.8154

Email: skipambrose@frontiernet.net

Project Summary:

To determine natural ambient sound levels in the primary vegetation types in NABR, and the relative influence of human-caused sounds on natural sound levels.

The only collections will be the collection of recorded sound data.


The National Park Service (NPS) is concerned with degradation of natural soundscapes in units of the National Park system. NPS Management Policies (4:9; 2001) states: "The National Park Service will preserve, to the greatest extent possible, the natural soundscapes of parks. Natural soundscapes exist in the absence of human-caused sound. The natural soundscape is the aggregate of all natural sounds that occur in parks, together with the physical capacity for transmitting natural sounds. Natural sounds occur within and beyond the range of sounds that humans can perceive, and can be transmitted through air, water, or solid materials."

"Using appropriate management planning, superintendents will identify what levels of human-caused sound can be accepted within the management purposes of the parks. The frequencies, magnitudes, and durations of human-caused sound considered acceptable will vary throughout the park, being generally greater in developed areas and generally lesser in undeveloped areas. In and adjacent to parks, the Service will monitor human activities that generate noise that adversely affects park soundscapes, including noise caused by mechanical or electronic devices. The Service will take action to prevent or minimize all noise that, through frequency, magnitude, or duration, adversely affects the natural soundscape or other park resources or values, or that exceeds levels that have been identified as being acceptable to, or appropriate for, visitor uses at the sites being monitored" (NPS 2001).

OBJECTIVES

1. Determine natural ambient sound levels in the primary habitats/acoustic zones in Natural Bridges National Monument, during the summer and winter seasons; and
2. Assess the influence of man-made noise on natural ambient sound levels.

The primary objective of this project is to provide basic acoustic data necessary for preparation of a Soundscape Management Plan for Natural Bridges National Monument. A secondary objective is to collect acoustic data which will be useful in assessing the influence of man-made noise on natural sounds.



2) Permit #: NABR-2006-SCI-0002

Study Title:

**HERBARIUM AND FIELD STUDIES OF VASCULAR PLANT FLORA OF NABR FOR
NATIONAL PARK SERVICE INVENTORY AND MONITORING PROGRAM**

Primary investigator contact information:

Name: Walter Fertig

Address: 1117 West Grand Canyon Dr., Kanab, UT 84741

Phone: 435-644-8129

Email: walt@kanab.net

Project Summary:

The purpose of this study is to document the vascular plant flora of Natural Bridges National Monument (NABR) and develop a plant distribution database using the National Park Service's NPSpecies system.

Collections:

Collection of only one specimen per plant species allowed, or 1-3 specimens of the same species can be collected to represent the species on a single herbarium sheet. Researcher can only collect plants not represented in the Natural Bridges National Monument Herbarium. Plant species that are too uncommon or are legally protected under the Endangered Species Act will not be collected but will have digital photos taken for documentation.

2005 Findings and Status:

As a preliminary step in developing an updated species list and distribution database for the park, I examined all specimens in the Natural Bridges NM herbarium to correct misidentifications, update species nomenclature (following Welsh et al. 2003, "A Utah Flora, third edition"), and add variety or subspecies names if needed. Of the 449 specimens currently deposited in the collection (not including 396 specimens out on loan) 10 were misidentified (2.2%), 38 had their names updated (8.5%), 34 had variety names added (7.6%), and 367 were confirmed as correctly identified (81.7%). The Natural Bridges NM herbarium currently contains 208 vascular plant taxa collected within the monument. Sixteen additional species have been documented for Natural Bridges based on collections at other herbaria and another 181 taxa are reported for the park (without vouchers) by Schelz and Moran (2005 SE Utah Group Plant list) and Welsh and Moore (1968 "Plants of Natural Bridges National Monument", Proceedings Utah Academy Sciences 45:220-248). Based on the Atlas of the Utah Flora (Albee et al. 1988), 309 additional species are reported from comparable habitats in the vicinity of Natural Bridges, but have not yet been documented within the monument. These results suggest that the Natural Bridges NM herbarium is missing between 49-60% of the plant taxa known or likely to occur in the park. In particular, fall-flowering, non-native, and wetland taxa appear to be under-represented. Targeted inventory work to fill gaps in the Natural Bridges NM vascular plant collection is recommended so that park manager's will have an improved understanding of the composition and status of the flora of the park and a more complete reference collection for researchers and staff interested in plant identification.

3) Permit #: NABR-2006-SCI-0003

Study Title:

SOIL SURVEY OF NATURAL BRIDGES NATIONAL MONUMENT, UTAH

Primary investigator contact information:

Name: Mr Victor Parslow, USDA Natural Resources Conservation Service

Address: 340 North 600 East, Richfield, UT 84701.

Phone: 435.896.6441 ext. 134

Email: Vic.Parslow@ut.usda.gov

Project Summary:

To provide an updated soil and ecological site inventory for Natural Bridges National Monument (NABR), that meets National Cooperative Soil Survey (NCSS) standards and monument management and planning needs.

The existing soil survey was conducted in the late 1970s's and the early 1980's as part of the San Juan County, Utah, Central Part soil survey. This inventory was primarily designed as a tool for use in managing grazing lands and has been found to be too general to be useful in managing the park. Information is insufficient to model salt movement, mitigate visitor impacts, identify and protect habitat of Threatened and Endangered species, and other park responsibilities.

In 2003, representatives of the National Park Service approached the Natural Resources Conservation Service to update the existing soil surveys within Arches and Canyonlands National Parks and Natural Bridges and Hovenweep National Monuments. The Plan of Work and contracted were approved in 2004. This application is seeking permission to carry out the field work necessary to complete the contract.

Collections:

Soil sampling allowed: 200 to 300 gram soil samples only. Archeologist must be present when digging any holes in ground. Some clipping of vegetation is allowed but must be kept to a minimum. Majority of soil samples will be destroyed in analysis. No collection of plants is allowed. Photos of plants for identification purposes is allowed.

4) Permit #: NABR-2006-SCI-0004

Study Title:

PILOT STUDIES TO INFORM RIPARIAN MONITORING PROTOCOLS – REFINEMENT OF SITE SELECTION METHODS AND FIELD TRIALS OF PROPOSED MONITORING METHODS

Primary investigator contact information:

Name: Dr. Michael Scott, U. S. Geological Survey

Address: 2150 Centre Ave, Bldg. C, Fort Collins, CO 80526

Phone: 970-226-9475

Email: Mike_L_Scott@usgs.gov

Project Summary:

We propose a research program aimed at testing methods described in the current draft protocols for monitoring riparian resources in Southern and Northern Colorado Plateau Network Parks. The monitoring of riparian resources has been identified by both networks as a high-

priority because these ecosystems contribute to high local biodiversity and are sensitive to a wide range of on-site and off-site human activities. By conducting field trials, we intend to refine two important components of the riparian monitoring protocols: (1) the site selection process based on the draft stream classification framework; and, (2) the in-field sampling procedures. Pilot studies will allow us to test the application of the classification framework, to conduct methods comparisons trials, to evaluate inter-observer error trials and to determine the number of stream transects within a reach that will be required to adequately characterize variance for selected metrics. Following the pilot studies, we will report the results in the 2006 field trial report and refine the draft riparian protocols; ultimately contributing to rigorous, repeatable and cost effective riparian monitoring protocols for the Southern and Northern Colorado Plateau Networks

Collections:

No material or specimens will be collected for this project.

5) Permit #: NABR-2006-SCI-0005

Study Title:

**RIPARIAN AND AQUATIC INVERTEBRATE MONITORING PROTOCOL AND
DEVELOPMENT (NPS I&M PROGRAM)**

Primary investigator contact information:

Name: Dr Anne Brasher, USGS, Water Science Center

Address: 121 West 200 South, Moab, UT 84532, USA

Phone: (435) 259-3866

Email: abrasher@usgs.gov

Project Summary:

The objective of the study is to develop a rigorous, well-integrated set of protocols for long-term riparian and macroinvertebrate monitoring across the Colorado Plateau. Another objective is to evaluate the utility of aquatic macroinvertebrates and riparian ecosystems as reliable indicators of aquatic ecosystem conditions in dryland systems characteristic of the Colorado Plateau.

Collections:

In general, macroinvertebrate samples are destroyed during analysis. Upon arrangement with the Park curator, a voucher collection from the sampling effort can be maintained at an established (museum) location following NPS repository standards.

Only the collection of aquatic invertebrates allowed. Most will be destroyed in analysis. Those curated will be stored according to NPS regulations at the Utah State University Bug Lab.

HOVENWEEP NATIONAL MONUMENT

2006 Research Permits

1) Permit #: HOVE-2006-SCI-0001

Study Title:

Sound Levels in Hovenweep National Monument

Primary investigator contact information:

Name: Skip Ambrose,

Address: HC 64 Box 2205 Castle Valley, UT 84532

Phone: 435-259-0401 or 970.227.8154

Email: skipambrose@frontiernet.net

Project Summary:

To determine natural ambient sound levels in the primary vegetation types in HOVE, and the relative influence of human-caused sounds on natural sound levels.

The only collections will be the collection of recorded sound data.

The National Park Service (NPS) is concerned with degradation of natural soundscapes in units of the National Park system. NPS Management Policies (4:9; 2001) states: "The National Park Service will preserve, to the greatest extent possible, the natural soundscapes of parks.

Natural soundscapes exist in the absence of human-caused sound. The natural soundscape is the aggregate of all natural sounds that occur in parks, together with the physical capacity for transmitting natural sounds. Natural sounds occur within and beyond the range of sounds that humans can perceive, and can be transmitted through air, water, or solid materials."

"Using appropriate management planning, superintendents will identify what levels of human-caused sound can be accepted within the management purposes of the parks. The frequencies, magnitudes, and durations of human-caused sound considered acceptable will vary throughout the park, being generally greater in developed areas and generally lesser in undeveloped areas. In and adjacent to parks, the Service will monitor human activities that generate noise that adversely affects park soundscapes, including noise caused by mechanical or electronic devices. The Service will take action to prevent or minimize all noise that, through frequency, magnitude, or duration, adversely affects the natural soundscape or other park resources or values, or that exceeds levels that have been identified as being acceptable to, or appropriate for, visitor uses at the sites being monitored" (NPS 2001).

OBJECTIVES

1. Determine natural ambient sound levels in the primary habitats/acoustic zones in Hovenweep National Monument, during the summer and winter seasons; and
2. Assess the influence of man-made noise on natural ambient sound levels.

The primary objective of this project is to provide basic acoustic data necessary for preparation of a Soundscape Management Plan for Hovenweep National Monument. A secondary objective is to collect acoustic data which will be useful in assessing the influence of man-made noise on natural sounds.

2) Permit #: HOVE-2006-SCI-0002

Study Title:

**HERBARIUM AND FIELD STUDIES OF VASCULAR PLANT FLORA OF HOVE FOR
NATIONAL PARK SERVICE INVENTORY AND MONITORING PROGRAM**

Primary investigator contact information:

Name: Walter Fertig

Address: 1117 West Grand Canyon Dr., Kanab, UT 84741

Phone: 435-644-8129

Email: walt@kanab.net

Project Summary:

The purpose of this study is to document the vascular plant flora of Hovenweep National Monument (HOVE) and develop a plant distribution database using the National Park Service's NPSpecies system.

Collections:

Collection of only one specimen per plant species allowed, or 1-3 specimens of the same species can be collected to represent the species on a single herbarium sheet. Researcher can only collect plants not represented in the Hovenweep National Monument Herbarium. Plant species that are too uncommon or are legally protected under the Endangered Species Act will not be collected but will have digital photos taken for documentation.

3) Permit #: HOVE-2006-SCI-0003

Study Title:

SOIL SURVEY OF HOVENWEEP NATIONAL MONUMENT, UTAH

Primary investigator contact information:

Name: Mr Victor Parslow, USDA Natural Resources Conservation Service

Address: 340 North 600 East, Richfield, UT 84701.

Phone: 435.896.6441 ext. 134

Email: Vic.Parslow@ut.usda.gov

Project Summary:

To provide an updated soil and ecological site inventory for Hovenweep National Monument (NABR), that meets National Cooperative Soil Survey (NCSS) standards and monument management and planning needs.

The existing soil survey was conducted in the late 1970s's and the early 1980's as part of the San Juan County, Utah, Central Part soil survey. This inventory was primarily designed as a tool for use in managing grazing lands and has been found to be too general to be useful in managing the park. Information is insufficient to model salt movement, mitigate visitor impacts, identify and protect habitat of Threatened and Endangered species, and other park responsibilities.

In 2003, representatives of the National Park Service approached the Natural Resources Conservation Service to update the existing soil surveys within Arches and Canyonlands National Parks and Natural Bridges and Hovenweep National Monuments. The Plan of Work and contracted were approved in 2004. This application is seeking permission to carry out the field work necessary to complete the contract.

Collections:

Soil sampling allowed: 200 to 300 gram soil samples only. Archeologist must be present when digging any holes in ground. Some clipping of vegetation is allowed but must be kept to a minimum. Majority of soil samples will be destroyed in analysis. No collection of plants is allowed. Photos of plants for identification purposes is allowed.